Exhibit IND1

IN THE UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

NEUROGRAFIX, a California corporation; WASHINGTON RESEARCH FOUNDATION, a not-for-profit Washington corporation,	)	
Plaintiffs,	)	No. CV 10-1990 (MRP)(RZX)
vs.	)	
SIEMENS MEDICAL SOLUTIONS USA, INC., a Delaware corporation and SIEMENS AKTIENGESELLESCHAFT, a German corporation,	)	
Defendants.	)	
AND RELATED CROSS-ACTION.	)	

VIDEOTAPED DEPOSITION OF

MICHAEL BRANT-ZAWADZKI, M.D.

Los Angeles, California

Tuesday, August 16, 2011

Reported By:

LISA MOSKOWITZ, CSR 10816, RPR, CLR

Job No. 41126

August 16, 2011

9:55 a.m.

Videotaped Deposition of MICHAEL BRANT-ZAWADZKI, M.D., held at the offices of Russ, August & Kabat, 12424 Wilshire Boulevard, 12th Floor, Los Angeles, California, pursuant to Notice before Lisa Moskowitz, Certified Shorthand Reporter and Registered Professional Reporter of the State of California.

A P P E A R A N C E S:

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BY: GREGG F. LoCASCIO, ESQ.
CHRISTOPHER R. NALEVANKO, ESQ.

ALSO PRESENT:
COURTNEY BATES, Videographer

THE VIDEOGRAPHER: This marks the start of disk No. 1 in the videotaped deposition of Michael Brant-Zawadzki in the matter of NeuroGrafix versus Siemens, et al., in the Central District Court of California, Western Division, Case No. CV 10-1990 (MRP)(RZX). This deposition is being held today at 12424 Wilshire Boulevard on the 12th floor in Los Angeles, California on August 16, 2011, at approximately 9:55 a.m. My name is Courtney Bates, and I'm here from TSG Reporting, Inc. I'm the legal video specialist, and I'm here with our court reporter, Lisa Moskowitz, in association with TSG Reporting. 09:35 09:54 09:54 09:55

At this time will counsel please give your appearances for the record.

MR. LoCASCIO: Sure. Gregg LoCascio and Chris Nalevanko on behalf of the defendants Siemens. 09:55

MR. FENSTER: Marc Fenster along with Fredricka Ung and Andrew Weiss on behalf of plaintiff NeuroGrafix and the 09:55

witness.

THE VIDEOGRAPHER: Thank you. And the reporter may now swear or affirm the witness.

M I C H A E L B R A N T-Z A W A D Z K I, M. D.
called as a witness, having been duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. LoCASCIO:

Q. Good morning, sir.

A. Morning.

Q. Can you pronounce your name just so I make sure I get it right.

A. Michael Brant-Zawadzki.

Q. Brant-Zawadzki?

A. Correct.

Q. You're a doctor; correct?

A. I am a doctor.

Q. Dr. Brant-Zawadzki, you have been hired by NeuroGrafix to provide expert testimony in this matter; correct?

A. Yes.

Q. And how much are you being paid an hour for your testimony?

has been something that's been in existence probably since the early '80s. 10:12

Q. And when was the first time you used T2 weighting in connection with an MRI image of a patient? 10:13

A. We actually wrote one of the earliest papers on the value of T2 weighting for evaluating brain pathology. So I think that was in about '82, '83 timeframe. I'd have to check my CV to give you the exact date. 10:13

Q. And while, from your earlier answer, it may not have been the goal or challenge of your work at the time, did you ever in that window, call it the 1980s, image a patient using T2 weighting where a nerve was visible in the image? 10:13

A. Certainly there are many instances of doing studies on patients where nerves are visible on the image.

Q. Those would predate 1993? 10:13

A. Yes.

Q. Using T2 weighting?

A. Correct.

Q. And have you, as of today, ever in your practice attempted to measure the 10:14

conspicuity of a nerve using a mathematical or qualitative formula -- quantitative formula? 10:14

A. In my practice?

Q. Correct.

A. I have not. 10:14

Q. Have you done it in connection with this matter?

A. Yes, I have.

Q. Was the first time you ever measured the conspicuity of a nerve using a quantitative method after you were retained in this case? 10:14

A. Yes.

Q. And your opening expert report contains no such calculations; correct?

A. I'd have to look at my opening expert report. I don't remember whether -- I don't even know what you mean by "the opening report." 10:14

Q. Sure.

A. So I can't answer. 10:14

Q. Did you run calculations to quantitatively measure conspicuity in connection with your work on this matter and not include any of those in your report?

MR. FENSTER: Objection. Vague. 10:15

THE WITNESS: No, I don't think so. I think the only -- no, I don't think so. 10:15

BY MR. LoCASCIO:

Q. So there -- you did not run a bunch of calculations and for either brevity or because they were inconsistent with your opinions leave those out? 10:15

A. I don't think I was ever asked to personally do that. I was asked to review Dr. Bryan's without calculating but just look at his calculations. I don't think I ever went through the exercise of doing that myself, though. 10:15

Q. Okay. 10:15

A. For conspicuity or specifically asking.

Q. So before you were hired in this case, you never quantitatively calculated conspicuity. Fair? 10:15

A. Of --

Q. Of a nerve.

A. Of a peripheral nerve, that's correct.

Q. Have you done it with any nerve where 10:16

you measured quantitatively conspicuity? 10:16

A. No.

Q. And since you were retained and have provided your opinions in this case, have you personally done any quantitative calculation of 10:16 nerve conspicuity?

A. Not nerve conspicuity, per se.

Q. You reviewed Dr. Bryan's calculations. We'll talk about that today.

Are you relying on anyone else's 10:16 calculations? So is there an assistant, for instance, in a lab or Dr. Filler ran some calculations and provided them to you or anything like that?

A. No. 10:16

Q. Are you relying on any actual quantitative calculations of nerve conspicuity to support your opinions?

A. I'm relying on some of the examples that Dr. Bryan gave to demonstrate that you can 10:17 make calculations of conspicuity in the way that he did.

Q. Your --

A. Let me qualify the term "relying." so I'm including in my opinions rather than 10:17

relying on. Okay? So I don't want to imply I'm relying only on that. I have an opinion. But noting what Dr. Bryan did and how he did it is part of my opinion. 10:17

Q. You disagree with the way Dr. Bryan did it. Fair? 10:17

A. I wouldn't say I disagree with the way he did it. I would say that there are -- in the spectrum of what he did, we have some disagreements. I think he demonstrated how a radiologist, one skilled in the art to use the legal phrase, creates a region of interest and how one does the mathematics of a calculation. So I agree with those concepts that he well demonstrated in his work. 10:17 10:18

I think the spectrum of what he did is not necessarily in the relatively confined concepts that are dictated for the conspicuity measurement as dictated by the patent or as implied by the patent. 10:18

Q. In your experience have you ever chosen a region of interest of a nerve using an MRI machine?

A. Well, certainly of the spinal cord. Have I ever done it for a nerve, a region of 10:18

interest in a nerve? I don't remember that I have. 10:18

Q. And the spinal cord would be part of the central nervous system?

A. Yes. 10:19

Q. And that, as you understand it, is not what the 360 patent relates to. Fair?

A. Fair.

Q. And if I remember right, the 360 patent identifies three types of nerves specifically, cranial nerves 3 through 12, the peripheral nerves, and the -- is it autonomic nerves? 10:19

A. I believe it does -- I remember something about the autonomic nerves being included somewhere in the text. 10:19

Q. Have you ever selected a region of interest for a cranial nerve 3 through 12?

A. You know, I may have in that we do stereotactic radiosurgery with a Gamma Knife in our institution, and occasionally the neurosurgeon will ask us to identify the fifth nerve which is a cranial nerve. So I think I have in that context, yes. 10:19

Q. Fifth is trigeminal? 10:20

A. Correct.

Q. Have you ever selected a region of interest in a peripheral nerve?

A. I don't think I have. I may have for the purposes of a slide. I think I may have because I do a lot of electroing, and I may have identified the nerve in the foramen of the spinal canal or the foramen through which the nerve exits the spinal canal and drawn it for the purposes of demonstrating the relationship of the peripheral nerve to the bony confine. So I may have done it in that context.

Q. Have you ever selected a region of interest for a autonomic nerve?

A. Not that I can recall.

Q. With respect to your answer a moment ago about the peripheral nerve, were you indicating that you've identified a peripheral nerve in the slide, for instance, at a presentation or that you have actually selected a region of interest and calculated the intensity of a peripheral nerve?

A. The former.

Q. So perhaps my question could have been more artfully worded.

Have you ever used an MRI machine to select a region of interest and measure the intensity of a peripheral nerve? 10:21

A. Not that I can recall, no.

Q. And have you ever measured the intensity in a selected region of interest for cranial nerve 3 through 12? 10:21

A. Signal intensity?

Q. Uh-huh.

A. Not that I can recall, no. 10:21

Q. Okay. And to, as you understand the 360 patent, measure the conspicuity of such a nerve, you would need to measure the signal intensity of the nerve and then measure the signal intensity of some non-neural tissue and compare those. Agreed? 10:21

A. Yes.

Q. And am I correct that you have never done that?

A. Outside of this case -- well, even in this case I personally have not done that, correct. 10:22

Q. You've selected regions of interest with respect to non-neural tissue in your career using an MRI. Fair? 10:22

A. Yes. 10:22

Q. So tumors, lesions, things like that?

A. Even neural tissue, abnormal neural tissue probably at some point in the past, yes.

Q. And when you've done that, is there some -- let me back up. 10:22

Is medicine, in your view in neurology -- pardon me. Withdrawn.

Is radiology all science, or is there some art in the practice? 10:22

MR. FENSTER: Objection. Vague.

THE WITNESS: Well, you know, I think medicine in general is thought of as being a science with some degree of art in it. So in that broad term there is that sense in the general public concept, I guess, around medicine. And in radiology, you know, we're more schooled in the concepts of anatomy and measurements. So there is some degree of known inter- and intra-observer variability even for measuring a linear distance. 10:23 10:23

For instance, if you ask a set of radiologists to measure the size of any 10:23

actually that we referred them to Pasadena and Dr. Tsuruda specifically. 10:49

Q. We talked about several different ways to measure the or select the ROI and thus the term signal intensity of a piece of image. 10:50 What method for selecting an ROI does the 360 patent teach?

A. Well, it teaches the selection of the entire nerve. Well, it kind of depends on which portion of the patent, I think, that 10:50 you're referring to. So there's one section where there's specific mention of selecting the nerve, and my memory of it is that it specifically talks about a fascicle pattern and cross-sectional type imaging of a nerve. So 10:50 there's quite specific portions of how to do that in that portion of the patent if that's what you're referring to. I don't know what you're referring to. You'd have to be a little bit more specific, I guess, in your question. 10:51

Q. You could --

A. What portion of the patent, I guess, is my response.

Q. You understand the patent has claims; correct? 10:51

A. Yes. 10:51

Q. Do the claims, in your view as one of skill in the art, require you to use any particular ROI or method of selecting an ROI, or is that left to the physician? 10:51

MR. FENSTER: Objection. Vague, legal conclusion.

THE WITNESS: It doesn't -- as I remember the patent, it doesn't specifically say use the oval tool or 10:51 use the circular tool or use the free trace tool. So in that sense there's not a specific mention of which tool.

BY MR. LoCASCIO:

Q. You've seen instances in the art 10:51 where -- in publications, for instance, people identified what their region of interest was across images or in a particular -- for instance, a five-pixel-by-five-pixel square or four-pixel-diameter oval? You've seen that 10:52 before; correct?

A. Where people select that or are told to select that?

Q. Described how they selected the ROI.

A. Where they themselves described how 10:52

they do that? Yes, of course. I think that's not uncommon in a research paper to say here's how I did it for purposes of reproducibility by another researcher. So yes, people in publications often describe the methodology because that's an important part of publishing a paper is for other researchers to understand how that particular set did it and the limitations of that, if any, and its ability to be reproduced. 10:52 10:52 10:52

Q. And to reproduce it you'd want to use the same parameters that the author used?

MR. FENSTER: Objection.

THE WITNESS: If you're doing research and you're trying to validate whether or not the author's -- I mean -- so I guess what I'm trying to say is that they're -- what people write in a research paper has a specific purpose over and above -- well, outside of my understanding of what a patent does, right. 10:52 10:53

BY MR. LoCASCIO:

Q. And your understanding of what a patent does comes from what the lawyers told 10:53

you because this is your first patent case? 10:53

A. Well, so it's my first patent case that I'm a participant in, but I'm certainly aware of famous patents and famous patent cases certainly in MR because it's a field that I've 10:53 grown up with. I was one of the earliest investigators in the field, and I paid attention to patent discussions. It's not just what the lawyers told me.

I have a background from just 10:53 participating in, again, the development of MR machines is one I've actually invested in but also academically. So I'm aware of how people construct patents. And it's not just what the lawyers told me in this case. 10:54

I'm sorry I'm wandering here.

Q. Sir, you're not an expert in patent law, are you?

A. Absolutely not.

Q. And you're not an expert in 10:54 drafting --

A. No. I'm sorry.

Q. You've never drafted a patent?

A. I've never drafted a patent.

Q. Until -- as of today you've never 10:54

even been the named inventor on a filed patent; correct? 10:54

A. Again, I don't know if ours, the one I mentioned earlier, is filed or not. That's correct. 10:54

Q. Is this effort that you're doing in this case the first time you ever read cover to cover a United States patent?

A. No, it's not actually. So I actually am an investor in another company that has a patent, although I'm not named on it. We are in actually a patent litigation -- that company is in a patent litigation situation. And so I have read that patent. It's been a while. 10:54

Q. What's the name of that company? 10:55

A. It's called DatCard.

Q. D-a-t-C-a-r-d?

A. Yes.

Q. With respect to how to select a region of interest in the 360 patent, does the patent describe a particular size or shape region of interest to use? 10:55

A. No.

Q. And does the 360 patent describe a particular method that must be used to measure 10:55

the region of interest to measure signal intensity? 10:55

A. My memory is that it does. Again, in certain portions of the patent, there are some specific mentions of how to select the region of interest. I'd have to reread that specific section to be more specific. 10:55

Q. Is your recollection --

A. Can I excuse myself before you start just for a brief visit to the restroom? 10:55

Q. Yeah. Can I ask one more question on this?

A. Sure.

Q. And then we'll take a break, and it's a fine time. 10:56

A. Okay.

Q. Does the -- in your recollection does the patent provide several options as to how to do it, or does the patent tell you this is the way to select an ROI? 10:56

A. Well, my memory of a certain section is that it talks about selecting the whole nerve and how to do it, and I'd have to, again, go back to that portion of the patent. But I remember there being a certain point where 10:56

THE WITNESS: For the purposes of determining conspicuity of nerves, the patent speaks for itself, yes.

BY MR. LoCASCIO:

Q. You've seen other formulas and other methods of measuring conspicuity; right?

A. I've seen other methods with different -- with X-ray techniques with -- yes.

Q. Even in MR; correct?

A. I don't know if I've seen other specific -- I don't remember that I've -- the last time I looked at something that said here's the conspicuity of something in MR. I don't remember that I have. I may have. I just don't remember that.

Q. Have you ever seen a method of measuring conspicuity in MR that took noise into account?

A. Well, I'm certainly familiar with the concept of noise in some aspects of measuring conspicuity. Noise is certainly a standard way of measuring certain things in radiography. So if we're talking about spatial resolution, distinction of edges from -- or the distinction of distances between lead lines on an X-ray

film, noise can play a significant factor as you get to finer and finer spaces between two different edges. 11:24

In the case of MR, particularly in certain techniques, noise may be a minimal factor as I think it is in this case. So noise -- if one creates a technique where noise is minimal or suppression of structures and such, one can choose to define, for the purposes of the technique, conspicuity without using the noise variable. 11:24 11:24

Q. And as you understand this particular patent, noise is disregarded for the purposes of measuring conspicuity?

A. Clearly the equation that the patent uses disregards noise, yes. And I think for a good reason. Noise is something that's in the background. But when you're comparing a nerve to immediately adjacent background tissue, the noise is going to be quite homogeneous and likely given the technique very, very low. So I think it's fair to disregard noise in the way the authors of the patent did. 11:25 11:25

Q. You earlier were identifying a comparison between I believe it was brain 11:25

tissue and the contrast agent. Was that correct? 11:25

A. Blood within the brain --

Q. Pardon me.

A. -- and contrast agent, yes. 11:25

Q. And I take it from your raising that example, those are closer in intensity than some other things that you've imaged but still distinguishable visually; correct?

A. They can overlap depending on certain factors. They can overlap. So there's a threshold above which blood doesn't appear. So blood has density values, Hounsfield units which in MR universe would be intensity units. The numerical values that represent the signal on CT are such that the blood goes up to a certain level and not beyond, whereas contrast goes beyond that. Below that level both blood and contrast can appear -- can have the same value. 11:26 11:26

So contrast -- let's say blood -- on a particular scanner blood does not go above 90 in Hounsfield values. Contrast can go up to 160. But if you have an add mixture of contrast in a normal brain, it can be 80 or 85 11:26

the 360 patent, measure the conspicuity of that nerve? 11:29

MR. FENSTER: Objection. Vague, incomplete hypothetical.

THE WITNESS: If you cannot identify the nerve? 11:29

BY MR. LoCASCIO:

Q. Visually.

A. Visually. The patent has certain techniques that help enhance the nerve which then make it visually visible, if you will. So the patent does provide certain guidelines, certain techniques for what initially you may wonder is this a nerve or is it not a nerve, provides certain guidelines that make the nerve visible. 11:29

Q. Things like fat suppression?

A. Fat suppression and diffusion, fascicular pattern, yes.

Q. If you use all those techniques that you believe are described in the 360 patent, in order to actually quantifiably measure the conspicuity to determine if it's 1.1 versus 1.08 versus 1.12, you would need to visually be able to identify the nerve to select the 11:29 11:30

regions of interest; correct? 11:30

A. At some point, yes. At some point -- yes. Again, as we said before, the first step is identifying the structure. If you're not sure is there such a structure, then you go to 11:30 the extent the patent directs you to bring out the structure, and once you've brought it out, then you go to the next steps.

Q. With respect to peripheral nerves in some locations, they're really small and hard 11:30 to see. Fair?

A. Fair.

Q. And if you perform all those techniques that are talked about in the 360 patent, there could still be a situation where 11:30 you visually can't see the nerve and thus can't measure its conspicuity. Fair?

A. Fair.

Q. And do you know where that point is? Is it 1.0001? Is it 1.1? Is it 1.6? Or 11:31 you're not sure?

MR. FENSTER: Objection. Vague, incomplete hypothetical.

BY MR. LoCASCIO:

Q. With respect to its conspicuity. 11:31

A. So the numbers refer to the conspicuity -- 11:31

Q. Yeah.

A. -- or the structure?

Q. The conspicuity. Let me back up a step. 11:31

A. Okay.

Q. You'd agree with me that if two -- if you were comparing two pixels -- withdrawn.

The patent talks about a region of interest possibly being a single pixel or voxel; correct? 11:31

A. Yes, it does.

Q. Okay. And so using that teaching of the 360 patent that it could be a single pixel or voxel, you'd agree with me that a pixel in a nerve that was call it faint, talking about how faint that is, and the non-neural tissue right next to it could -- the difference between their intensity could be very small. Fair? 11:31 11:32

MR. FENSTER: Objection. Vague, incomplete hypothetical.

THE WITNESS: I'm not sure I can follow that questioning. So you wouldn't pick -- first you have to 11:32

Q. It says at block 122, second sentence, line 54, "One or more regions of interest, ROI, within the image can be identified. Each ROI may be a single pixel or voxel, or a larger region." 12:06

So you'd agree with me, sir, that the 360 patent tells you you can use a single pixel or voxel for an ROI; correct?

A. Yes. It states that in this sentence each ROI may be a single pixel or voxel. 12:06

Q. Or a larger region; right?

A. Yes.

Q. It also says that, "ROI selection can be performed manually using, for example, a keyboard or mouse to move a cursor over the ROI 12:07 on the displayed image." Right?

A. We discussed that earlier, yes.

Q. "Alternatively ROI selection may be accomplished automatically by a sequential selection of all pixels or via an external 12:07 input regarding a particular region from, for example, diagnostic system."

Did I read that correctly?

A. Yes.

Q. That's what you cited for the 12:07

sentence in paragraph 18 about how the patent teaches to select a region of interest; correct? 12:07

MR. FENSTER: Objection. Misstates the report. 12:07

THE WITNESS: I'm sorry. You're referring back to what I said where?

BY MR. LoCASCIO:

Q. Paragraph 18 you said, "The patent teaches selecting a region of interest." Correct? 12:07

A. Yes.

Q. And the citation to that is what we just read?

A. The range of -- we kind of talked about that earlier, the range of methods that one does that. 12:07

Q. And the patent itself says it can be one of a host of different ways of selecting a region of interest; correct? 12:08

A. It gives examples of three, I guess, right there.

Q. And one is single pixel or voxel, one is a larger region manually selected, and one is automatically? 12:08

A. Correct. 12:08

Q. Is doesn't say which of those is the right one to use or which of those to use to determine conspicuity; correct? It leaves that up to the operator? 12:08

A. Right.

Q. And you'd agree with me that different operators could select different methods of selecting the region of interest?

A. Yes. 12:08

Q. You make a point in an earlier paragraph about the ROI intensity is to be interpreted or determined by an average intensity.

Do you recall that? 12:08

A. In -- well, yes. Any time you do an ROI, you actually -- if you're including more than one voxel, you're averaging basically.

Q. There's my question which is if it's a single pixel or voxel which the patent says 12:09 is one method of determining an ROI, can you take the average of a single pixel or voxel?

A. No.

Q. Because there's only one data point. Fair? 12:09

A. Yes. 12:09

Q. A minute ago you said any time you do an ROI, you're averaging basically. There are other ways in imaging to measure or quantify the intensity in a region of interest. You can 12:09 do a min, max. You can do things other than a straight average; correct?

A. Well, yes, there are mathematical constructs that -- you can take a mean. You can take a median. The common parlance of 12:09 average to me is several ways of taking a set of data points and deciding where you're going to put your money; right? And the mathematical subdivisions of that include average in the pure mathematical sense of the word "average." 12:10 To me the word "average" in this context was more generic than the strictly mathematical sense of the word "average."

But the general answer to your question is yes. 12:10

Q. Do you think the patent requires single intensity to be measured by a mathematical average, or is that term not used that precisely in the patent?

MR. FENSTER: Objection. Vague, 12:10

A. So it may contain portions of a nerve, but that's not the purpose of this image is to show a nerve under the 360 patent. 12:15

Q. No -- nothing in the only image in your reports that we're looking at here on page 13 shows the selection of even a region of interest in a nerve that's covered by the 360 patent; correct? 12:15

A. Not on this image and probably nothing on my report, correct, other than what was submitted as a rebuttal to Dr. Bryan's images. But those were, I guess, originally Dr. Filler's images. 12:15

Q. And so you have not shown in your expert report -- your first one. We'll get to the rebuttal in a minute. But your opening expert report, Defendants' Exhibit No. 36, does not show the selection of a region of interest in a nerve that is one of the nerves required of the 360 patent; true? 12:16

A. That's right. True. 12:16

Q. And you have not shown any images reflecting the uniformity of the signal intensity for any nerve that falls within the scope of the 360 patent either, have you? 12:16

MR. FENSTER: Objection. Vague. 12:16

THE WITNESS: No.

MR. LoCASCIO: Was that knock on the window the lunch-is-ready-for-team-NeuroGrafix knock? 12:16

MR. FENSTER: I think so.

MR. LoCASCIO: Let's take a break. We'll take our half hour now.

THE VIDEOGRAPHER: The time is 12:17 p.m. We are off the record. 12:17

(Recess taken from 12:17 p.m. to 12:49 p.m.)

THE VIDEOGRAPHER: The time is 12:49 p.m., and we are back on the record. 12:49

BY MR. LoCASCIO:

Q. Good afternoon, sir.

A. Good afternoon.

Q. The calculation of conspicuity in the 360 patent involves using a single image, not a set of images; correct? 12:49

A. Yes. I mean I think the calculation conspicuity in anything involves a single image including in this patent. 12:50

Q. And so as the patent describes it, the determination of selecting the ROIs and the measure of that conspicuity is to be done on an image, not a set of images; right? 12:50

A. Specifically for the calculation of conspicuity, and one would use a single image. To identify a structure, one may use multiple images, continuous images. But for the calculation of conspicuity, one would select an image and the structure on that thing. 12:50

Q. And the patent's discussion of selecting a region of interest for the nerve and the non-neural tissue is based on doing that off of a single image; true?

A. Yes. 12:51

Q. We talked before lunch about the patent excluding or ignoring noise in its signal intensity calculations; correct?

A. Yes.

Q. We also saw that the patent talked about an ROI could be a single pixel; right? 12:51

A. Yes.

Q. And sometimes there are pixel or intensity deviations because of noise. Fair?

A. Well, within the pixel, no. I 12:51

would be the most reproducible methodology to use as an example. But you'd have you to know that voxel represents nerve tissue. 12:59

So you'd have to look at the other images, see if there's a contiguity from a bigger structure down, down, down, oh, yeah, it connects. This is the voxel representative of a nerve on this image, and everything else is black or everything else isn't. So then you could be a hundred percent sure that voxel has the intensity that it does. And you might select different voxels in the background which might vary slightly. 12:59

You know, if it's as bright as you're postulating, then it would be probably the most reproducible way you could have for intra- and inter-observer calculations. 13:00

Q. The example you just gave could not be performed using a single image, could it?

MR. FENSTER: Objection. Vague. 13:00

BY MR. LoCASCIO:

Q. To know that a single pixel was a nerve in a cross-section?

A. If you're presented with a single pixel in a cross-section and that's the only 13:00

thing that's bright, could that be a nerve? You wouldn't know that without using other parts of the art, if you will, which is knowing that there's fat saturation and diffusion in weighting, and something in the next slice was also that. So the answer is yeah, but you wouldn't -- that's not what you would do; right? That's not what people practice imaging. 13:00 13:00

Q. There are various points in your rebuttal report which we'll look at where you take issue with things Dr. Bryan says in his opening report. There are a lot of things you don't disagree with Dr. Bryan about; correct? 13:01

A. I'd like to think Nick and I agree on most things. 13:01

Q. Dr. Bryan says there's no industry standard for selecting ROIs. You don't dispute that in your report. Do you dispute that as you sit here today? 13:01

A. Well, there's no industry standard one way of doing it, but most people would do it the way he did it for selecting regions of interest, and that's very similar to the way I would do it and another neuroradiologist or 13:01

radiologist would do it.

So there is a -- even though there isn't an industry standard that says, "Do it exactly this way," that's how I interpret the word "standard" as opposed to "guideline," for instance, a lesser prescriptive term. There's no industry standard.

Q. And the patent doesn't set forth a standard unique to the patent either; correct?

A. For selecting --

Q. For selecting an ROI.

A. -- ROI? It discusses -- I think we've been through this ground. It discusses several ways of -- possibilities of doing it.

Q. But not a standard?

A. A standard implies to me one way; right?

Q. The way to do it if you want to measure it under the patent. It doesn't give you that, does it?

MR. FENSTER: Objection. Vague.

THE WITNESS: Under the patent? I don't know if there's a different connotation to the word standard "in the legal world under the patent. The

patent describes methodologies, with an S. If that means there's not one standard way, then it doesn't. 13:02

BY MR. LoCASCIO:

Q. Dr. Bryan says, "When an application calls for evaluating image quality or characteristics based on an ROI, the precise parameters and protocol for selecting the ROI are required." 13:03

Do you agree?

MR. FENSTER: Objection. Vague.

THE WITNESS: Run that by me again.

BY MR. LoCASCIO:

Q. Sure. "when an application calls for evaluating image quality or characteristics based on an ROI, the precise parameters and protocol for selecting the ROI are required." 13:03

MR. FENSTER: Objection. Vague, incomplete hypothetical.

THE WITNESS: I don't know. Required by whom? I've never heard anybody state that. I don't know what Nick -- Dr. Bryan was referring to in that statement. 13:03

BY MR. LoCASCIO: 13:03

Q. Dr. Bryan cites to several articles that talk about the ROI impacting quantitative measurements. You'd agree with him that the selection of the ROI impacts quantitative 13:04 measurements of signal intensity; correct?

MR. FENSTER: Objection. Vague.

THE WITNESS: Well, I think that the articles are reversed in the context of those articles, are research articles 13:04 written for the purposes of explaining a methodology towards a certain purpose in the research work and guiding other researchers as to how to reproduce that work, I think. I mean that's my sense 13:04 of the context in which he made that statement or you made that statement.

BY MR. LoCASCIO:

Q. Do you agree that the method of ROI definition has a direct influence on 13:04 quantitative outcome? Is that a true statement or not?

MR. FENSTER: Objection. Vague.

THE WITNESS: In the purest mathematical sense, that's a true 13:04

statement.

BY MR. LoCASCIO:

Q. And do you believe there's no practical influence on the quantitative outcome? Is that the basis for your sort of hedging on that a little bit?

MR. FENSTER: Objection. Vague, incomplete hypothetical.

THE WITNESS: So yes, I think that there is a difference between practical and purely mathematical. Maybe I can tell an anecdote to give you -- maybe it's a little bit off color, but I'll try to make it -- so if you ask an engineer and a physicist to approach the object of their most intense desire with a member of their opposite sex and you tell them you can only go halfway with each step, the physicist will say or the mathematician will say, "I'm giving up. I'll never get there." And the engineer will say, "Well, I calculate that in six steps I'll be there for all practical purposes."

So that's the difference between

absolute mathematical reasoning, quantitative, if you will, and practical; right? So if I choose to translate that or if I translate that into the current context, if I take three different ways of selecting region of interest, I may get to the 1.1 conspicuity threshold 90 percent of the time with each of the different three methodologies. That would be the practical end result of not having a standard in a mathematical sense or quantitative sense for doing the calculations; right? 13:05 13:06 13:06

BY MR. LoCASCIO: 13:06

Q. But just as if you could take three different ways and get to 1.1 each way, you'd acknowledge that it's possible the math could work out that you do it once and you get 1.12, you do it once and you get 1.10, and you do it once and you get 1.08. That's possible as well. Fair? 13:06

MR. FENSTER: Objection. Incomplete hypothetical.

THE WITNESS: Well, I think it's 13:06

I can just tell you that I remember doing some editing of this particular language. 13:42

Q. So your opinion, sir, as set forth here in your declaration, requires the analysis of the T2 decay time of the surrounding tissue to determine whether or not the claim limitations are met? That's what you read 3D as requiring? 13:42

A. Well, it's --

Q. Because you look at the specific surrounding tissue being CSF, and you look at T2 decay, and that's what you're doing here; correct? 13:42

A. I'm saying that Hajnal does not fit the claim language because it shows nerves surrounded by tissue, fluid, that has a substantially longer T2 time. 13:42

Q. Because it's in the subarachnoid space?

A. By definition, yes. The subarachnoid space is the space within which the spinal fluid lives. 13:43

Q. Did you know before you put your report together -- did anybody tell you that NeuroGrafix argued that cranial nerves should 13:43

be limited to only the portion outside the subarachnoid space, and the court said, "No, that's wrong"? Do you know that? 13:43

A. As I sit here right now, no, I don't know that. 13:43

MR. LoCASCIO: Let's take a break.

THE VIDEOGRAPHER: The time is 1:43 p.m., and we're off the record.

(Recess taken from 1:43 p.m. to 1:52 p.m.) 13:52

THE VIDEOGRAPHER: The time is 1:52 p.m., and we are back on the record.

BY MR. LoCASCIO:

Q. Sir, before the break we had talked previously about Dr. Bryan's view that the ROI definition has a direct influence on quantitative outcomes. 13:52

Do you remember that?

A. Yes. 13:53

Q. You understand that there are various references in the literature where it is discussed specifically that the method of ROI definition has a direct influence on quantitative outcome for MR. Fair? 13:53

A. Yes. It's an internally consistent statement. ROI implies quantitative. 13:53

Q. And the 360 patent requires a quantitative calculation to determine whether or not you infringe; correct? 13:53

A. Again, the phrase "quantitative calculation" is a redundancy. Anything that is a calculation is quantitative.

Q. My question, then, sir, is the 360 patent requires a quantitative assessment or calculation to actually determine if there is infringement; right? 13:53

A. I don't know if -- again, I'm not an attorney enough to know if the word "requires" is correct. I know the component of infringement is an ROI calculation, a component of the infringement. Whether the patent requires it or not, I would leave to an attorney's interpretation. 13:54

Q. As one of skill in the art, sir, when you read claim 3, if you want to know whether you're practicing it or not -- 13:54

A. That's one way of knowing whether I'm practicing it or not is by doing the calculation. 13:54

Q. What's another way? 13:54

A. I think we've covered this before. So if I'm using fat saturation, diffusion-weight imaging for the purposes of highlighting T2 nerves, to me -- again, I'm not 13:54 an attorney -- I would be concerned that I'm infringing. If I have to resort to doing the calculation, then maybe -- you know, I don't know. I'd leave that to a legal interpretation, whether I have to actually do 13:54 the calculation to determine if I'm infringing.

So if I do a technique and it shows the nerve and I do the calculation and it's not 1.1, then I'm not infringing? I don't know. To me I'd be concerned I'm infringing just by 13:55 doing all the other things the patent discusses.

Q. If they show the nerve?

A. If they show the nerve.

Q. Your expert report -- 13:55

A. I figured if I -- can I add on?

Q. Go ahead.

A. If I did that and I did the calculation and it shows 1.1, then I am definitely infringing. Okay? I think that's 13:55

the addition to what I said. That's my understanding of the patent. 13:55

Q. You think if you performed what you understand to be the steps of the claims of the 360 patent and saw a nerve as a result of those techniques, you might be infringing? 13:55

A. I might be infringing, yes, that's my sense.

Q. Regardless of what the math actually came out to be or whether you did it? 13:56

A. Well, I think -- so, again, I'd have to reread the patent exactly. And as I sit here today, I'm not sure in my own mind whether that's a requirement as the word you used or not. 13:56

Q. Your expert report handy? It's Exhibit 36. I'll direct your attention to page 17. Paragraph 49 says, "Importantly it is also my opinion that there was no more specific way within the art to describe the 'conspicuity' term than the method used in the claims of the 360 patent." 13:56

Do you see that?

A. Yes.

Q. The sentence then -- the next 13:57

sentence says, "MRIs use -- MRI uses ROIs (the basic unit of which is picture) volume elements or pixels (voxels) and their measured signal intensities to characterize images and structures." 13:57

Did I read that correctly?

A. Uh-huh, yes.

Q. I want to make sure I understand. The first sentence you say, "There's no more specific way to describe conspicuity." Are you also saying, as a result of that and the next sentence that follows, that there was no more specific way in the art to describe how to select an ROI, or is that not what your opinion is? 13:57

A. In the second sentence?

Q. In the first or second. Let me back up. Is it your opinion, sir, that there was no more specific way in the art to define the ROI selection process than what's set forth in the 360 patent? 13:58

A. Yes. We talked about -- earlier about different modalities having different ways of describing conspicuity, and I don't think any of them are more specific than any 13:58

other given the relativistic universe of context that we covered, I think. So the term "specific" is the most operative word in that sentence, and I stand by what that sentence says. 13:58

Q. So am I right that you don't think there's a more specific way to define the ROI to be used than what's set forth in the patent?

A. No, it says "the conspicuity term." It talks about conspicuity, no more specific way within the art to describe the conspicuity term, not ROIs. 13:58

Q. You agree there are more specific ways to prescribe how to select an ROI than what's set forth in this patent? 13:59

A. Can you be much more prescriptive about how to select an ROI? Can you say -- yes, you should only use an ROI that's three pixel by three pixel, and that's it. You can be more specific in prescribing how, for a given purpose, to determine an ROI. But that's -- okay. That's my answer. 13:59

(Defendants' Exhibit 39 was marked for identification.)

BY MR. LoCASCIO: 13:59

Q. I show you Defendants' Exhibit 39 which is an article you cited. The first author is a gentleman by the name of David Bonekamp. I want to direct your attention to 13:59 page 4.

Do you see at the top it talks about ROIs drawn with two different techniques, polygonal and ellipsoid ROIs?

A. I do. 14:00

Q. And then it goes on to talk about, for example with respect to the ellipsoid ROIs, where they were placed, how they were spaced, the size of the ROIs was chosen to encompass 16 pixels, et cetera. 14:00

Do you see all that?

A. Yes.

Q. Would you agree that's a more specific way to define ROI selection?

A. For this specific purpose, yes. 14:00 They're comparing two different methodologies of ROI selection; so yes. It's a methodology section of a research article, yes.

Q. And the 360 patent does not provide such details for the ROI selection. Agreed? 14:00

A. That's not the purpose of the patent. 14:00

Q. I didn't ask you what the purpose was, sir. I asked you if it described it or not.

A. It does not. 14:00

Q. We've talked a lot about 1.1 as conspicuity. There's a claim of the patent that talks about a five times conspicuity.

Do you recall that?

A. I do. 14:01

Q. And if you have the patent out which is probably underneath your stack, it's Exhibit 11. It's claim 19. I want you to turn to that. It's column 41.

A. Okay. 14:01

Q. It says, "The method of claim 18 wherein said data set distinguishes said nerve from non-neural tissue in the in vivo region so that said data set describes the nerve as an intensity at least five times that of the 14:01 non-neural tissue."

Do you see that?

A. Yes.

Q. From your opinion in this case, do your opinions vis-a-vis 1.1 conspicuity all 14:01

apply with equal force to this claim, the five times conspicuity, or is there something unique about how one measures conspicuity or an ROI that would distinguish in some way your opinions with respect to this issue or this claim versus the ones we've talked about today? 14:01 14:02

A. I don't have enough of a context to answer your question. So maybe you can explain it a little more specifically.

Q. Sure. For instance, we talked earlier about scenarios where three different measurements or three different radiologists could look at the same image, and their measured conspicuities based on the selections of those ROIs could have some slight difference. 14:02 14:02

Do you recall that discussion?

A. Yes.

Q. We talked about it in the context of being just above 1.1, being at 1.1, and being below 1.1. 14:02

Do you recall that?

A. Yes.

Q. Does this claim which requires that the intensity be at least five times the 14:02

Q. In your view does it apply to the whole nerve that's shown in the image? 14:11

A. No, not in my view. What we're talking about here is -- again, I haven't reread the entire thing. We're talking about for the purposes of ROI, you're taking a sample that represents a whole nerve meaning wholly being nerve as opposed to a portion nerve and a portion not nerve. 14:11

Q. And so when you said a person of ordinary skill would not be confused as to whether to use the whole nerve or some subsection of the nerve because the claim says to calculate the conspicuity of the, quote, nerve, unquote, you're not suggesting there that all portions of the nerve shown in the image need to be included in the ROI, are you? 14:11

A. I'm not. I'm just saying that some subsection like the upper half or the lower half of a long segment that is within the boundaries of the nerve, you know, of the whole nerve. 14:12

In other words, the region of interest needs to contain neural tissue that you're convinced of is neural tissue. It 14:12

doesn't mean the entire length of the nerve. It doesn't mean the entire segment of the nerve on the image. It just means for the purposes of the ROI, that ROI contains wholly nerve. 14:12

Q. You're comparing in this sentence the whole nerve to some subsection of the nerve; right? That's what this sentence contrasts; true? 14:12

A. Meaning a component of the nerve within a region of interest and a component of other tissue within the region of interest. 14:12

Q. Okay. So when you read this to yourself, sir, do you agree that this seems to suggest one of ordinary skill would use the whole nerve as opposed to some subsection of the nerve? 14:13

A. I think someone -- again, person of ordinary skill in the art would know how to interpret that sentence.

Q. Okay. You've got Dr. Filler's images still in front of you. I want you to look at figures 5, 6, and 7. Let's start with 5. 14:13

A. Okay.

Q. Do you recall, sir, that Dr. Filler himself indicated that a single user such as 14:13

Dr. Filler could select ROIs of the same nerve or the same non-neural tissue and generate intensity measurements with some variability? 14:13

A. I think we've covered that. I don't know if Dr. Filler -- I can't remember whether Dr. Filler himself said that or not, but I'll take your word for it. 14:14

Q. And if we look at figures 5, 6, and 7, Dr. Filler measures three things in 5, two things in 6, and two things in 7. Plexus and lung are in all three. The plexus is nerve; true? 14:14

A. True.

Q. And the lung is non-neural tissue. Agreed? 14:14

A. Yes.

Q. And if we start with figure 5, Dr. Filler's signal mean -- which of those three I take it is the average since it's mean, min, and max? 14:14

A. Right.

Q. Is mean in your view the same thing as one of skill in the art as average, or are they different?

A. Mean is average, yes. 14:14

Q. His average intensity or signal mean for lung is 13.77. 14:14

Do you see that in figure 5?

A. For lung, yes, 13.77.

Q. And if we go to figure 6, the next figure, he is at lung 16.76. 14:15

Do you see that?

A. Yes.

Q. And if we go to figure 7, he measures 19.32 as the mean for the lung. Agreed? 14:15

A. Yes.

Q. And this demonstrates some degree of variability between his ROI selections for those non-neural measurements. Agreed?

MR. FENSTER: Objection. Misstates. 14:15

THE WITNESS: It demonstrates some degree of variability. He's demonstrating, I think, three different images. Or is it the same image? Let me look. 14:15

These are kind of faded. You tell me. Is it the same image he's using for each of those determinations?

BY MR. LoCASCIO: 14:16

Q. Do you know, sir, if he uses the same DICOM data or different DICOM data for those three?

A. It looks to be the same with different window settings. 14:16

Q. So that's different setting applied by the operator to the data?

A. Well, applied by whoever put these images on the sheet of film but yes. 14:16

Q. And --

A. So the regions of interest in the lung appear to be in slightly different locations. So they may include more connective tissue, more air sacs. Lung is not a homogenous tissue. So I'm not surprised there's some variability in his mean measurements of lung signal intensity. 14:16

Q. And so there's some mean --

A. And also the other thing about lung is it contains air; so there's what's called a magnetic susceptibility effect. It's a nonhomogeneous magnetic tissue. One would not use lung typically as an example. I don't know why he chose lung. I don't know what his 14:16

purpose was.

I think the more appropriate example -- I mean one would normally use scaly muscle rather than lung knowing, skilled in the art, air and magnetic susceptible issues with air-containing structures could affect signal intensity. 14:17

Q. In these three figures that were Dr. Filler's exhibits to his rebuttal report, there are three different lung ROIs used in comparison to those being the non-neural tissue. Agreed? 14:17

A. Yes.

Q. And we can recognize the variability. It goes from 13.7 all the way up to 19.3. Agreed? 14:17

A. Yes.

Q. And his plexus neural tissue also have has some variability from 71 to 76.

Do you see that? 14:17

A. Yes, less than 10 percent but yes.

Q. I want you to look at his conspicuity calculations now. And that's in the lung row of 5, do you see "conspicuity mean"? It's the sixth column. 14:18

A. It says "conspicuity min, max and max, min." 14:18

Q. And one says "mean."

A. I see the "mean," yes. Thank you.

Q. In figure 5 Dr. Filler found a conspicuity of 5.22 in this DICOM data between the neural being plexus and non-neural tissue being lung. 14:18

Do you see that?

A. Yes. 14:18

Q. So Dr. Filler himself measured this image and determined a conspicuity greater than 5?

A. Right.

Q. Under that calculation and the claim language we looked at that has the five times -- 14:18

A. Right.

Q. -- this would, all the things being equal, infringe. Fair? 14:18

A. Well, I mean I think this isn't using the art -- I mean on another set of images generated by someone who isn't using the art? Is that what you mean?

Q. Sir, with respect to the conspicuity 14:18

limitation, Dr. Filler's calculations here would show it satisfies the conspicuity of 5 limitation in claim 19? 14:18

A. And the 1.1 obviously, yes.

Q. Look at figure 6. On the same DICOM data, Dr. Filler gets a conspicuity measurement of 4.56 using different ROIs; correct? 14:19

A. Yes.

Q. And we'll look at the next one, figure 7. Dr. Filler generates new ROIs and gets a conspicuity of 3.80. 14:19

Do you see that?

A. Yes.

Q. So at least with respect to this image, when Dr. Filler himself used three different settings on the DICOM data and three different ROIs. One of them fell over the 5 limitation of claim 19, and two of them fell below that; right? 14:19

A. Over or under, yes. 14:19

Q. The same data, the same scan, depending on how you measured it, would satisfy the 5 limitation or not satisfy it depending on the selection; true?

A. Yes. 14:20

Q. That's what this shows? 14:20
A. Yes. It speaks for itself.
Q. You looked at Dr. Bryan's images as well from his report; correct, sir?
A. Yes. 14:20
Q. I'll hand you what we'll mark as defendants 41.
(Defendants' Exhibit 41 was marked for identification.)
BY MR. LoCASCIO: 14:20
Q. And based on some of the earlier discussion today, I got the sense, sir, that sometimes you thought Dr. Bryan's ROI selections were not consistent with the teachings of the 360 patent, and sometimes they 14:20 were. Is that correct?
A. Yes.
Q. Can you walk me through the images in Exhibit C and tell me where you think Dr. Bryan's ROI placements or sizes, et cetera, 14:21 the selection of ROIs by Dr. Bryan are consistent with the teachings of the 360 patent and where they are not? Let me first ask are you capable of doing that as we walk through these? 14:21

A. Yes. 14:21

Q. Can you do that for me? And perhaps the easiest way is just to refer to the figure on the bottom. So the first one is Exhibit C, figure 1. And the ROIs are conveniently 14:21 numbered. So you can just sort of and walk through them and tell me if they are consistent with the 360 patent or in your view an opinion not consistent with the proper selection of an ROI. 14:21

A. Right. So just as an example, ROI No. 3 -- the selection of ROI No. 3 or No. 2 for that matter, neither one, shows what could be conceived of as the brightest area on an image. And Dr. Bryan, I think, would argue 14:22 that this is an example of how the patent is nonspecific or whatever the right term is because it allows a calculation where conspicuity of the nerve is actually lower than the, quote, surrounding, unquote, tissue; 14:22 right?

So to me that, again, is inconsistent because to me the understanding is you compare the conspicuity of the nerve with the nearby adjacent or surrounding tissue. So the more 14:22

volume of non-neural tissue within them. So I would have selected the nerve immediately below the two regions of interest or the same nerve more proximally or the contralateral nerve where it's homogeneous and definitive to the structure. 15:00 15:00

As for the immediately adjacent or surrounding non-neural tissue, I think ROI 2 is better than ROI 1, but it suffices.

Q. So 1 and 2 -- 15:00

A. I'm sorry. ROI -- let me make sure I said that. Actually it looks like ROI 2 may be -- actually it looks like they're partially volumed in those actually, both of those. I would have selected muscle tissue, and it that actually looks like there's some in-plane portion of nerve in there because it's all brachial plexus region. So I would have selected definitive muscle tissue and not what could be partially neural -- in fact, it is partially neural tissue. He calls it non-neural. I think it's partially neural. 15:00 15:01

Q. Do you know that or --

A. No. It looks -- it certainly looks that way. 15:01

Q. Is that something that with this image standing alone you know for a fact, or that's your interpretation? 15:01

A. Well, it certainly looks like as you go down the trunk it looks like it becomes a little bit more into the plane as a nerve. So, you know, I would not select that wondering -- I think thinking it's partially neural tissue. I would have selected -- for me the calculation would have been on the other side, on the left side of the spine where there's definitive nerve and definitive muscle immediately adjacent. 15:01

Q. Let's look at figure 7.

A. Okay. 15:01

Q. Are those nerve ROIs, in your view, consistent with the teachings of the 360 patent?

A. The -- it looks like there's some freehand drawings on the left side. The upper ROI is consistent, and the two on the left are consistent. I would choose the upper one more than the lower one, but they're consistent with it, yes. 15:02

Q. Okay. And so the two freehand 15:02

drawings on the left -- 15:02

A. Not the two. Just the upper one at most.

Q. Okay. What about the ones on the right? 15:02

A. The ones on the right, the uppermost one is the most optimal. I would have taken it a little bit further down where there's discrete nerve. There's that little very bright spot which could represented the 15:02 vascular structure signal superimposed. I would have taken it down a little bit lower.

If I were measuring for sure nerve and for sure adjacent tissue, I would measure just a smidgen further down the nerve on the 15:03 left than the topmost region of interest.

Q. That white spot just above and to the left at like 10 o'clock of the oval, is that neural or non-neural tissue?

A. I think that is brighter and suggests 15:03 to me a vascular structure. I would have to look at other images, adjacent images, or do other things to make sure of that. But to me it looks like there's a composite between either some spinal fluid and/or a vascular 15:03

structure and a nerve together.

Q. A vascular structure is non-neural; correct?

A. Yes.

Q. So right next to that oval is something that you believe may be non-neural tissue that's brighter than the oval; correct?

A. It could be some spinal fluid. It could be some non-neural tissue, yes.

Q. And that is brighter or higher conspicuity --

A. Yes.

Q. -- than the nerve next to it?

A. It obviously stands out more than what I consider to be the trunk of the nerve. But I wouldn't use that as nerve signal because it might give me too high a signal intensity for the calculation.

Q. And ROI 5, the pixel or really small area, is that within the nerve as taught by the 360 patent or not?

A. You can't -- I don't think you can use that.

Q. Why not?

A. Well, because it's too tiny an ROI

for what is a larger structure, and I think that larger structure is not homogenous in that region. It's partially in and partially out of the plane of the image. 15:04

Q. So in your view ROI 5 would not be something you would use when trying to measure an ROI under the 360 patent? 15:04

A. Correct.

Q. Because it's too small?

A. And because I'm not sure that it's the whole of the nerve as we discussed before. I think that there is portions -- there may be portions of that that is non-nerve, and it may be that that tiny ROI that was chosen is not within the nerve or does not contain nerve, not entirely within the nerve or contains no nerve. 15:04 15:05

Q. Let's look at figure 8, please. All ten of those ROIs show neural tissue; correct?

A. They show portions of neural tissue, yes. 15:05

Q. And all of those portions of the neural tissue result in, because they're different ROI selections, different signal intensities. Fair?

A. Yes. Again, the same argument. I 15:05

would select ones I was certain was the representative of nerve tissue which in this case would be ROI No. 7 -- let's see, 6 or 7? No. 6. That would be my selection. 15:05

Q. The patent doesn't say use what Dr. Brant-Zawadzki says to use. It says it's for what one of skill in the art might choose. Is it your opinion, sir, that every person of skill in the art would choose 6 and not the others? 15:05 15:06

A. I think that most people under the teaching of the patent would choose the most representative portion of the nerve which to me would me would be No. 6 or in the immediate vicinity of No. 6. 15:06

Q. What if you wanted one on the other side?

A. Well, you wouldn't want that because you want -- by definition under the patent you'd want the most representative portion of the nerve. 15:06

Q. Are those different nerves, the left side versus the right side?

A. No, they're all within the brachial plexus. But under the teachings of the patent, 15:06

you'd want the most representative portion of what you know is nerve. So even though they're the same general anatomic structure, you want the most -- what you're convinced of visually is the most representative portion of neural tissue which to me would be -- of the ones chosen here, would be No. 6. 15:06 15:06

Q. And are you saying, as you sit here today under oath, in your view of the patent all the other ROIs in this are wrong, and they could not be used according to the teachings of the 360 patent? 15:07

A. They should not be used by a trained observer in the art for choosing the most representative segment of neural tissue on this image. 15:07

Q. And it's your belief that the claims require to use an ROI that is most representative of any single nerve on the image? 15:07

A. That is my understanding of the patent, yes. For the purposes of documenting infringement; right?

Q. Let me show you what we'll mark as defense 42. 15:07

(Defendants' Exhibit 42 was marked for identification.)

BY MR. LoCASCIO:

Q. We talked about thresholding earlier today.

A. Yes.

Q. This is Dr. Bryan's rebuttal Exhibit 2. You've seen this before; correct?

A. Yes.

Q. And this is an example of using a software to threshold the brightest portions of Dr. Filler's Exhibit C; correct?

A. Yes.

Q. And this shows that at 10 percent, 30 percent, 40 percent, even 50 and beyond, the nerve is not shown using a signal intensity threshold; correct?

A. I think at 70 it is. Did you say -- I forgot what you --

Q. I got up to 50.

A. Okay. 60, 70, work backwards. So you got up to -- yeah, 50 I would say you cannot tell definitive neural tissue.

Q. And so the --

A. At 60 I think you're beginning to see

nerve in it. Certainly at 70 you do. 15:08

Q. So if you use a threshold to just take the highest signal intensity, using the image by Dr. Filler, you don't see the nerve when you threshold at the top 10, 30, 40, or 15:09 even 50 signal intensity; correct?

A. Correct.

Q. You don't dispute that analysis or data, do you?

A. Well, no, I don't. There are little 15:09 individual tiny dots which may show nerves. But you'd have to use other methods to see if that's really nerve or not. So definitively just using the threshold image, single image without a set of images, within that context 15:09 you're right.

Q. As you're sitting here today, sir, is there anything about your opinions that you think now that we've gone through your deposition is incorrect and needs to be changed 15:09 or corrected?

A. I don't know that I can even think anymore; so I'd say no.

Q. Anything about your answers today that you believe was inaccurate or needs to be 15:09

corrected?

A. Not as I sit here right now.

Q. Have you talked to NeuroGrafix's lawyers about any questions they want to ask you or answers they want you to give?

A. We talked about several items that they raised and I think he's going to ask me.

Q. Did you talk about what the questions would be or what the answers would be?

A. We talked about what the questions -- the general context of questions might be.

Q. Any discussion about what the answers would be?

A. Well, no. I mean I think -- no, I don't know the answers. It's like region of interest sampling as you're trying to suggest. It will be in the ballpark of opinions I've had before. They were checking to see if my opinions were still my opinions. So that's representative of what the answer you're looking for.

Q. Did they tell you what to say and what not to say?

A. No.

Q. Did you practice it at all?